FAQ: HPA-SQL FOR DB2
MAY 2013
# Table of Contents

1 WHAT IS HPA-SQL FOR DB2? .............................................................. 3
2 WHAT ARE HPA-SQL FOR DB2 UNIQUE ADVANTAGES? .................. 4
3 BUSINESS BENEFITS ........................................................................ 4
4 WHY PURCHASING HPA-SQL FOR DB2? .................................... 5
5 WHAT KIND OF TRACES ARE USED BY THE PRODUCT? ............... 5
6 IS MANDATORY THE USE OF TRACES? ........................................ 6
7 DOES HPA-SQL FOR DB2 RECOGNIZE IDENTICAL AND SIMILAR SQLS? ......................... 6
8 DOES HPA-SQL HAVE A UTILITY TO CLEAR ITS REPOSITORY? ............ 7
9 ZIIP PROCESSORS PROVIDE COST REDUCTION. HOW CAN HPA-SQL HELP? ........ 7
10 SUPPORTED DATABASE AND Z/OS VERSION .................................. 8
11 DOES HPA-SQL HAVE A PERFORMANCE DATABASE? ................... 8
12 I NEED TO MAKE A CHANGE TO A DB2 INDEX. CAN HPA-SQL HELP ME TO SEE THE IMPACT? ................................................................. 8
13 CAN I USE HPA-SQL TO COMPARE ACCESS PATH CHANGES AFTER APPLICATION CHANGES OR CHECK UNWANTED CHANGES AFTER DB2 MIGRATION? ....................... 9
14 DOES HPA-SQL COMPETE WITH QUERY MONITORING TOOLS, SUCH AS CA-DETECTOR OR IBM QUERY MONITOR? .................................................. 9
15 DO DB2 MONITORS, LIKE OMEGAMON/MAINVIEW COMPETE WITH HPA-SQL FOR DB2? ................................................................. 9
What is HPA-SQL FOR DB2?

HPA-SQL FOR DB2 is a differentiated solution – it has several unique features to identify performance problems in SQL DB2 z/OS applications.

HPA-SQL offers a complete solution to monitor and discover performance problems in DB2 applications. It is an Integrated Tool that can cover the most important aspects related to the process of analyzing DB2 z/OS applications.

Also, HPA-SQL has several unique features that actually innovates the methods to identify problems in DB2 applications.

The main idea of HPA-SQL is to analyze your DB2 environment using all the Information available from DB2: Traces started along with DB2 execution with a minimum overhead. SQL texts are referred from all possible sources, table definitions and Explain Data. All this data is saved in a repository making it possible to do an integrated analysis of your DB2.

Optimal performance gains can be reached because your entire DB2 workload can be used as a starting point in the process of analyzing DB2 performance, instead of just analyzing a single Batch Address Space or a single CICS Transaction. This point of view offers the best way to save more DB2 CPU than any other process. Applying efforts to improve performance for top consumers will guarantee the best overall results for the entire z/OS, saving more CPU cycles and I/Os.

HPA-SQL can also be used in a Workload Base approach what is very important matter. The analysis of performance problems are based on workload only (executed programs). Sometimes performance improvement for one statement in an application may cause regression in other statements of the application.

Of course, the collected workload data must be reliable. Traces in sampling mode may be not reliable.

The effort for tuning the whole application with good performance by evaluating every single statement is overwhelming. Workload tuning speeds up analysis.
2 What are HPA-SQL FOR DB2 unique advantages?

It allows analysis of the entire workload instead of just one batch program or a specific online transaction. Under this vision, efforts on improving the biggest CPU users in the environment give the best results in terms of CPU and I/Os savings.

The product also creates a consolidated inventory of SQL statements. Identical and similar SQLs statements are grouped to speed up the analysis. This feature is used in the entire product, allowing more MIPs savings. The product also allows DBAs to speed up the analysis process because several programs can be analyzed at the same time, instead of doing one by one.

It is workload based: therefore, you can do your analysis for programs that really run, although all kinds of analysis can be done. Also, different from other ISVs, it gives you that whole DB2 CPU consumption scenario: by CICS, BATCH, DRDA, Utilities, etc.

Another important feature is the Automatic Index Recommendation. Every DBA knows that a DB2 index can do miracle in terms of CPU savings! We do a global index recommendation: the product shows you which indexes should be created or dropped. A global impact is done in order to avoid a negative effect in DB2 performance.

3 Business benefits

The benefits are:

- Increased availability; more stable business give greater return.
- Helps the performance analyst to get excellent results on MIPS reduction;
- Optimized performance gains, since the starting point could be the whole DB2 workload, not only limited to jobs or transactions;
- Non-intrusive, therefore, without risks of stopping the customer’s transactional environment;
- Flexible tool and of easy customization;
• 100% automated conclusion to identify which change should be executed;
• Extremely comprehensive analysis: an example, is the automatic recommendation of DB2 indexes (create and delete);
• High levels of assertiveness and productivity;
• It allows timely or continuous use in the environment;
• Reduces the time invested on environment mapping;
• It reduces rework;
• Savings in software and hardware licenses;
• Impact analysis of changes on DB2 environment;

4 Why purchasing HPA-SQL for DB2?

HPA-SQL for DB2 is a new and different solution. In order to understand, let’s use a car as an example: from time to time a manufacturer releases a new car and it always comes with more features and facilities when compared to the old version and compared to other manufactures.

HPA-SQL for DB2 is different because:
- It has several unique features.
- It innovates the method to identify performance problems.
- It is really an integrated solution, while other competitors are not.

Normally software vendors split their product main functionalities in different packages. This is not good for the customers. If a customer wants the complete solution, he will need to spend more money from its budget.

Comparing ISV vendors and car manufactures again: the ISV vendor sells the car but you need to buy the tire in another package!

5 What kind of traces are used by the product?

The product has several optional methods to collect DB2 workload data.
The following traces can be used:

- **Accounting Traces:** This information provided by this trace can be generated using sampling method or not – you can leave the trace on 24 x 7. If the trace is already being collected by other tool, HPA-SQL can share the same data, with no more overhead. HPA-SQL can even be used lower your current accounting trace overhead: using our *Start Trace Collector*, users can turn this trace on in sampling mode instead of 24 x 7. However, many customers are turning this trace on full-time because the overhead is low.

- **Performance Traces:** this trace must be activated in sampling mode, due to overhead. Using HPA-SQL sampling mode, the total overhead will be less than 5%.

- **Monitoring Traces / Real-time Traces:** DB2 cache (dynamic and static SQL) is used by HPA-SQL to get SQL execution statistics. The overhead of this trace is 1.3%. Because overhead is too little, this trace can be turned on full-time (24 x 7).

### 6 Is mandatory the use of traces?

No. Many performance analyses can be performed even if no traces are available. The SQL Inventory, Enhanced Explain and other features can be used.

### 7 Does HPA-SQL FOR DB2 recognize identical and similar SQLs?

Yes. HPA-SQL has a feature called “SQL Inventory”. This facility creates cross-references of “identical” and “similar” SQLs.

The inventory is language independent (asm, cobol, qmf, java, natural, dynamic sqls, etc). And it not attached to the time when SQL was captured into the product repository. Therefore, the same identical SQL can be recognized over the time.

Examples of identical SQL:

'SELECT * from table where code=?'
'EXEC SQL DECLARE cursor CSA for SELECT * from table where CODE=:H'

Examples of similar SQL:

'select * from table where code=? and name = john'

'select address from table where code=? and name = john'

'update owner.table set phone = :H where name = john and code= :H'

This is a very powerful facility. It allows increasing substantially the performance analysis process. For example, in a customer POC, we were able to find an identical SQL spread in over than 300 different programs! In this case, we have provided a single solution that could be used in 300 programs at the same time.

Also, SQL inventory allows the customer to check if application code modularization is being done. Modularization is very good to avoid re-work and to minimize mistakes.

8 Does HPA-SQL have a utility to clear its repository?

HPA-SQL FOR DB2 has a very smart utility to clear the repository according to several filters.

This utility helps customer to keep the repository up-to-date as well as improve the product response time and reduce the time required to execute our batch utilities.

9 ZIIP processors provide cost reduction. How can HPA-SQL help?

HPA-SQL FOR DB2 has several reports that identify where the CPU usage has occurred: CP processors or ZIIP processors.
10 Supported Database and z/OS version

HPA-SQL supports DB2 V8 and above. z/OS 1.10 and above.
Please, always consult your local representative for updated information.

11 Does HPA-SQL have a Performance Database?

“Performance Management Databases (PMDBs) will emerge in the next five years as a second point of data-level integration. This isn't an alternative to a Configuration Management Database (CMDB), which focuses on the configuration of an IT service for change impact. Rather, it is an additional management database that focuses on managing data needed for the performance management workflow cycle, which will require federation and reconciliation.” Moreover, "A PMDB must be able to provide data for the entire performance management workflow cycle real-time analytics, historical data analysis, long-term capacity planning and performance tuning."


HPA-SQL, since its conception, was designed to be have a PMDB.

Our data is stored in DB2 tables (HPA-SQL Repository). It allows history, capacity planning, etc.

12 I need to make a change to a DB2 index. Can HPA-SQL help me to see the impact?

Yes. HPA-SQL has several reports that make the index change task much easier. Using the tool, users can see the savings before implementing the index. It also can help customers to model new indexes as well as help the analysis of existing indexes.
13 Can I use HPA-SQL to compare access path changes after application changes or check unwanted changes after DB2 migration?

Yes. HPA-SQL can do Plan Table comparison. This can be used after application changes or to compare access path changes before migrate to a new DB2 version.

14 Does HPA-SQL compete with query monitoring tools, such as CA-Detector or IBM Query Monitor?

No. The products are complementary.

However, new trace capabilities of DB2 version 10 allow the monitoring of SQL CPU usage with very low overhead. Now, the overhead to monitor static SQLs is very similar to the overhead of monitoring dynamic SQL in cache.

To see real-time CPU usage for static and dynamic SQLs, you will need to buy a specific license key.

Note: the data provided by SQL cache area is very similar to Query Monitors Tools. However, Query Monitors Tools provides more information when compared to SQL Cache Area. Also, they have other facilities not provided by HPA-SQL because HPA-SQL is not a monitor.

The DB2 traces are just an optional input to HPA-SQL.

15 Do DB2 monitors, like Omegamon/Mainview compete with HPA-SQL FOR DB2?

No. HPA-SQL is not a monitor tool.

Omegamon, Mainview, CA-Insight, ASC-Tmon are DB2 subsystem monitors.